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of June, 1847, and of which a full abstract is contained in the fourth volume of the 'Proceedings,' p. 691. The long historical memoir, and quotations from former authors, have now been omitted.

"Attempt to apply instrumental measurement to the Zodiacal Light." By Prof. C. Piazzi Smyth.

After describing the manner in which the zodiacal light was first strongly represented to him in South Africa in 1843, and which seemed to imply that some of the received opinions with regard to it were erroneous, the author describes an equatorial instrument which he contrived for the purpose of measuring the right ascension and declination of the apex of the light; some instrumental method of determining these data, and thence the principal phenomena of the appearances, being evidently desirable on account of the immense extent to which the judgement may be biassed by prejudice or casual circumstances, when the mere senses are trusted to for determining the extent, situation and character of so faint and vague a body.

The most favourable astronomical, atmospheric and personal conditions requisite to obtain undeniable observations of the zodiacal light are pointed out; and aided partly by strict attention to these, and partly by the clear atmosphere of the high mountains on which he was then residing, the author found the phenomenon to be of a far more stable and determinate character than has generally been represented; and his observations, made by the above instrument in the years 1844-45, of which a list is given, seem to be affected with a probable error not greater than 2° .

Since his return from the Cape, the author's geographical position has wholly prevented him from continuing his observations: he therefore now publishes his experiences to induce others in more favourable situations to follow up the subject; which by comparing his results with those of other observers in the northern hemisphere, he shows has many of its principal features in a state of ambiguity, that ought not in the present day to be allowed to exist any longer; and further, to enable others to take up the subject as nearly as possible as he left it off, the author adds to his paper a series of views of the different appearances of the zodiacal light at various seasons of the year, and explains the peculiar projections employed to give a true as well as a pictorial representation of the sky.

The ordinary Meetings of the Society were then adjourned to Thursday, November 16.

June 9, 1848.

The General Meeting for the election of Fellows was held this day, The MARQUIS OF NORTHAMPTON, President, in the Chair. The President addressed the Society as follows:—

GENTLEMEN,

I have generally commenced my annual addresses to you, by returning my thanks to my colleagues in the Council for the assistance that I have received from them in performing my presidential duties. On the present occasion I must extend my acknowledgement, and express, in the warmest manner that I am able, my grateful sense of the unvarying kindness that I have experienced at the hands of the Society at large.

Holding our General Meeting, as we now do for the first time in June, six months only having elapsed since the election of the last Council, there are many topics of former addresses which will form no part of that which I now deliver. The time for the award of our Medals has not yet arrived. It would also be premature to give an obituary, before the official announcement, of the names of those Fellows whom we have lost, which announcement will take place as usual on St. Andrew's day. I presume, however, that henceforth the obituary will be read in June, with reference to the deaths declared in the preceding November. This will in some respects be more convenient, and will give additional time for its due preparation.

I regret extremely, that I have it not in my power to announce to you that any intelligence has arrived respecting the Northern Expedition of Sir John Franklin. It is hardly necessary for me to mention, that both by land and sea the Government has taken steps to obtain intelligence of, and also to give assistance to our gallant explorers. I am sure you will all join me in the fervent wish that Heaven may prosper these endeavours.

I have to inform you, that the Council of the University of London have been so kind as to grant us the temporary loan, if we should have occasion to wish for it, of three rooms adjoining to ours and to those of the Society of Antiquaries. This concession may be very convenient to the Royal Society. One of these rooms is lent to the Society of Antiquaries, for their use, on Thursday evenings: I need hardly say, therefore, that at those times, we could not make use of them, and that it would have been the farthest thing from the wish of us all to interfere with the accommodation of a Society, with which we have always been, and I trust always shall be, on the most friendly terms: indeed, so many of our Fellows form also a portion of the Society of Antiquaries, that there must always be a mutual bond between us. On your part then, Gentlemen, I beg to express our thanks to the Chancellor and Council of the University of London.

Today, Gentlemen, come into operation for the first time our new regulations on the subject of election. I have never concealed my own doubts on the main feature of these regulations. I believe that many Fellows of the Society participate in these doubts, but it would be to me a matter of the deepest regret if they do not receive a fair trial. Still more should I deplore the result, if the supposed errors of these regulations were to be visited on the unoffending

Candidates. In saying this I hope it will be understood that I do not wish in the least to interfere with the free exercise of the rights of the Fellows. The Council would have no right to complain, because every Candidate selected by them was not elected, and still less because some were to be elected whom they had not named; for I need scarcely repeat, that the Fellows may elect all the Candidates before them, or none of them. The latter alternative would however convey an expression of opinion against both the claims of the Candidates and the justice of the Council's selection neither complimentary nor just. I therefore really think that the Council would be hardly treated, if at least the greater part of the selected Candidates were not elected.

It is rather a singular circumstance, that, since our selection was made, one of the gentlemen whom we had chosen, Mr. Syme, should have withdrawn his name. The stringency of our rules has afforded the Council no means of supplying his place. The possibility of occurrence of such a case had not arisen in the minds of the former Council, when the new rules were framed, but it may perhaps be considered next year whether it ought to be provided against, or whether it is likely to occur so seldom as not to require any special provision.

Many of you are probably cognizant of the Winteringham bequest, by which an annual sum of money was left to be invested in the purchase of a silver cup as a prize for a scientific essay. To the good intention of the testator I am bound to express our obligation. The conditions of the bequest are however so complicated and troublesome, that it appears hardly possible to comply with them; and it is besides extremely problematical whether the prize would really obtain essays worthy of it. In that case it is obvious that no benefit would be conferred on science, while the Royal Society would find itself placed in what has been called a false position. I have therefore thought it best, in agreement with the opinion of your Council, and of other Fellows whom I have also consulted, to do nothing in the matter in this the last year of my presiding over you, leaving the question to be fully and maturely decided by my successor and the Council, with whom he will have to deliberate.

With politics, in their ordinary sense, we as a Scientific Society have nothing to do, except as far as public events may tend to favour or discourage those studies, for the promotion of which the Royal Society was established. I cannot but fear, Gentlemen, that the promotion of scientific progress will be retarded by the disorder that at present exists on the Continent, and by the degree in which men's minds are engaged in state affairs. It is creditable, I think, to foreign governments under such circumstances, that the combined prosecution of magnetical inquiries is still continued. This combined inquiry is however soon coming to an end, but I hope that the ingenious self-registering instrument invented by our colleague Mr. Brooke, and now most successfully employed in the Royal Observatory at Greenwich, may find its way into other national establishments, and by that means enable other

countries to continue inquiries without any serious expense. It must be within your cognizance, Gentlemen, that many schemes for alterations in our Society have been of late suggested, or, to speak more correctly, have been hinted at, for nothing distinct or definite has been proposed, as far as I know. Those who advocate such plans should always remember that the Royal Society is not placed, like the Institute in France, under the protection of the government, nor supported at the public expense. Whether that be a gain or not is not a question for our consideration, but for my own part I should be sorry to exchange our independence for any other advantage. As however we have to support ourselves, any such extreme restriction of our numbers as should make us a very select body would deprive us of the power of publishing those Transactions, which constitute the main part of our scientific usefulness. Our body consists not only of men of science, but also to a certain extent of literary men, eminent artists and gentlemen of rank and station. I believe that this widening of the basis of our Society is most useful to it, and besides serves the important purpose of enlisting in the cause of science those who may patronize and defend, though they do not follow her.

There are some persons who seem to think that it would be advisable for us, not only to be a common link and bond for the other Societies of London, but also actually to unite with them, and thus to form one monster Society. This is certainly an imposing scheme, but I very much doubt its practicability, and still more its advantage to the cause of science itself. I doubt whether any one Society could follow out all the ramifications of individual branches of knowledge as they are now followed out by the Linnæan, Astronomical and Geological Societies. It may however be worth considering whether we might not lend our rooms for the service of some of those Societies that have not convenient places of meeting. This we have already done, in some instances, to the Commission on Weights and Measures. Of course, however, nothing of this kind should be done without mature consideration.

There cannot be a doubt, Gentlemen, that the establishment of separate Societies must have deprived the Philosophical Transactions of many papers of great interest; and this has probably led to the notion that our Society is less flourishing than it was. As, however, I believe that the whole number of scientific papers published in England is increased, and as the object of the Royal Society is, not our own glory, but the improvement of natural knowledge, and the scientific honour of the country, we ought not to regret that valuable communications adorn other Transactions than our own. We ought also the less to regret this circumstance, as most of the principal supporters of other Societies are members of our body also. At the same time we may sometimes feel sorry that particular communications are not made to us, and we may perhaps think that some of our Fellows are not quite so mindful of us as they should be.

After filling the honourable office of your President for ten years, I think it is now right to surrender it to some one who has higher

qualifications for it than I can pretend to possess. I have long entertained the opinion that it was not desirable that an individual should hold it for life, as has been the case with some of my predecessors, though I do not quite agree with those who think that its tenure should be limited to a very short period. You are probably aware that it is the intention of your Council to recommend as my successor a nobleman who has displayed for a long series of years the greatest zeal for the progress of Astronomy. You must all be aware, Gentlemen, of the wonderful telescope made by Lord Rosse, the great ingenuity displayed in its construction, and the labour and expense that it must have cost its constructor. These are strong claims on the Royal Society, and strong guarantees for his future zeal in your service, and in that of science in general. I do not hesitate to add, and the more so as some seem inclined to demur to my opinion, that it is clear to my own mind that his rank and station are additional reasons in his favour. I am not, indeed, one of those who hold that any rank or position, however exalted, can confer honour on science : on the contrary, I shall always maintain that science confers honour on them : it is, however, not less clear that the possession of wealth, of rank, and of station, gives to their possessors the power of aiding science in various ways ; and this is the real point to be considered. On the question, however, of my successor, which is one for your decision, I feel that it would be indelicate and improper for me to say more.

In retiring from the office of your President, whatever may have been my other deficiencies, I trust no one can justly reproach me with want of zeal for your interests and your honour. To my colleagues in the different Councils, who have been elected by the general body, I must attribute whatever prosperity may have attended the Society during the last ten years. In looking back to that period, there are three circumstances that give me unmixed pleasure. The first of these is the very important series of papers on Electro-Magnetism, for which we are indebted to a philosopher, of whose presence among us we have especial reason to be proud : I need hardly name to you Professor Faraday. The second point to which I refer is the prompt attention that was paid by the British Government to the joint recommendation of the Royal Society and the British Association to send an expedition for scientific purposes to the southern regions of the globe. The glory which has attended the successful exertions of Sir James Ross and his brave comrades is reflected not only on his country, but also on the Societies that recommended, and the Government that sent out the expedition.

The third subject that claims my attention, and to which I have already alluded, is the great conjoint inquiry on Terrestrial Magnetism, still going on, and owing its origin to the united recommendations of the British Association and the Royal Society.

It is true that this object had been brought before the notice of the Royal Society some years before by one of the most illustrious of modern travellers and philosophers, the author of 'Cosmos,' M. Humboldt ; but the immediate origin of the undertaking was the

recommendations of the two English societies, acting on foreign Governments through our own. To the Foreign Secretary of the Royal Society, in conjunction with Dr. Lloyd of Dublin, was confided the important task of drawing up the regulations under which the inquiries of associated *nations*, instead of associated *individuals*, were to be carried on.

In the case, too, of the South Polar Expedition, the Royal Society was applied to by the Government for scientific recommendations; and your Council, in conjunction with your different scientific Committees, drew up a Report of the highest value, not only to the particular voyage for which it was specially prepared, but also for all other similar undertakings, and even for every scientific traveller in little-known regions of the globe.

It would be invidious, Gentlemen, to allude to individual papers that have been published in your Transactions during the term of my Presidency. I should not, indeed, be capable of doing justice to all, even if time permitted, which it certainly does not. I may perhaps, however, allude to one philosophical invention described in them, as being most important to the great inquiry on Terrestrial Magnetism—I mean Mr. Brooke's Photographic Self-Registering Instrument, which I have already mentioned. On the same head, I may take the opportunity to return the thanks of the Society to Colonel Sabine for the labour he has bestowed on the Magnetical Observations made at Toronto and elsewhere.

You will all rejoice, Gentlemen, I am sure, to see the zeal that is shown without as well as within the Royal Society in the cause of science; to see the continued prosperity of the British Association; to see our new as well as our old Societies flourishing; to hear of fresh discoveries in Astronomy; to see the great collections of Natural History in the British Museum and the College of Surgeons augmented every year; to find our knowledge of the wonderful animals now extinct,—of the *Dinornis*, *Iguanodon*, and other monsters of antiquity,—increased by the labours of an Owen, a Mantell, and others; to see a magnificent pile rising to contain specimens of the economic geology of Great Britain and Ireland, and of the finished products of Art that owe their existence to it.

These, Gentlemen, are all reasons why we should rejoice, and also to see the increased degree in which the importance of science is acknowledged for ship-building, for agriculture, and for the preservation of human life and health in our great cities, in the great hives of human industry. But they are not only reasons for rejoicing, they are reasons why we should return our hearty thanks to Almighty Providence for thus blessing our land. Lastly, we should remember that where so much has been given much will be required, and that it is our duty to extend these blessings as far as we can for the happiness and comfort of our fellow-men.

On the motion of Sir R. H. Inglis, Bart., the thanks of the Society were voted to his Lordship for his Address, with a request that he would allow it to be printed.

The President having directed the senior Secretary to read the Statutes for the election of Fellows, Sir Charles Lemon, Bart., and Mr. Wheatstone, were, with the consent of the meeting, appointed Scrutators. Mr. A. J. Stephens then moved that the meeting do now adjourn. The motion was seconded by Dr. John Lee, but on being put to the question was declared to be lost.

The election was then proceeded with, when the votes of the Fellows present having been collected, the following gentlemen were declared to have been duly elected:—

George Bishop, Esq.	John Henry Lefroy, Capt. R.A.
Rev. James Challis.	James Ormiston M ^c William, M.D.
Henry Clerk, Capt. R.E.	Thomas Oldham, Esq.
William Fergusson, Esq.	Lyon Playfair, Ph.D.
Robert Were Fox, Esq.	Robert Porrett, Esq.
Henry James, Capt. R.E.	John Stenhouse, Ph.D.
Robert Gordon Latham, M.D.	Allen Thomson, M.D.

The thanks of the Society were voted to the Scrutators, and the meeting adjourned.

November 16, 1848.

The MARQUIS OF NORTHAMPTON, President, in the Chair.

The time of the Meeting was occupied in reading the Minutes of the last Ordinary Meeting and of the General Meeting.

November 23, 1848.

GEORGE RENNIE, Esq., Treasurer, in the Chair.

“On the Chemical Nature of Wax.”—Part III. “On Myricine.” By B. C. Brodie, Esq. Communicated by Sir B. C. Brodie, Bart., F.R.S.

This paper is the last of three papers on the chemical nature of wax, and contains the investigation of that portion of bees-wax which is soluble only with difficulty in boiling alcohol. This body could never be rightly investigated before the discovery of the true nature of the other constituent of the wax, namely, the cerotic acid, for the absence of which no test was known, and the products of the decomposition of which would materially interfere with any experiments on the nature of the myricine. When the cerotic acid has been absolutely removed by repeated boiling of the wax with alcohol, a substance remains, which is saponifiable, but with difficulty. From the products of saponification the author isolated palmitic acid, $C_{32}H_{52}O_4$, and a new wax-alcohol, analogous to, but yet different from cerotine, described in a former paper. This alcohol, melissine, has the formula